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INJURIOUS INSECTS OF 1897.

Sir,—At the close of each year a note of the chief insect infestations that have appeared is sometimes thought of interest, and I therefore venture to submit the following observations in case they should be approved for insertion:

The kinds of insects injurious to agricultural and fruit crops, and likewise to forest trees, regarding which enquiries have been sent me during the past year, have been above the average in number, and amongst them some few have been of kinds little, if at all, recorded as being injurious in this country previously; also more enquiry has occurred regarding insect presence imported in grain or flour. But although there have been local cases of serious injury from attacks of some one kind of insect occurring at widely separated localities, there has not again been any general outbreak. Amongst corn attacks the presence of the maggot of the Angoumois Moth in barley, imported from North Africa, is worth notice, as, though previously present to a slight degree, and also a kind of attack, not likely to spread in fields here, yet it may establish itself in stored corn, and the injury in the imported barley was to an amount causing a difficulty in disposal of it to maltsters. The ordinary corn insects were more or less present, including a very slight amount of Hessian fly, and also, for the first time since 1888, some amount of report of presence of Corn Sawfly, *Pyrausta nautica*. This is an attack causing the corn stems to fall at ground level, and one of which recurrence can be more easily prevented than that of almost any other infestation. Granary weevils were more than commonly enquired about, and an adaptation of the broad scale plan of clearing them, by passing the grain over screens of a mesh to let the beetles drop through answered well in connection with hunting stables where the weevils were numerous in Oats. The first observation which I have had of the presence of the "Haystack Mite" (*Tyroglyphus longior*) in stacked oats was also sent, but this though attracting notice from the masses of mites collected, or fallen, round the stacks does no harm excepting a little tickling in the throat to animals consuming the fodder. The Mediterranean Mill Moth, is unfortunately establishing itself more and more in flour mills, and in flour stores, and I also had it this year in flour shipped from an Adriatic port. Amongst attacks to root crops, and to roots of grass and corn crops, damage was as usual done by the Wireworms and Daddy-long-legs grubs, also by maggots of Cockchafer and Rose Chafers, especially by the last, for the ravages of which at grass roots no reasonably practicable remedy has as yet been brought forward, and the winter feeding caterpillars of the Small Swift Moth, a badly destructive infestation, are now showing themselves. Amongst Turnip attacks, Diamond-back moth appeared at several localities late in the season, and attacks of a small weevil and a gnat-midge maggot in the seed were present, also an unusual amount of damage was done to roots not much advanced in growth, by "surface caterpillars," &c. Specimens were also forwarded to me of a very wasteful though not quite newly-observed method of injury to linen put out to bleach, caused by surface caterpillars being folded up in the linen when taken off the grass, and gnawing through the folds to free themselves.

The common attacks to cabbage, carrots, beans, &c. were more or less present, and one bad attack to mangold leafage of the caterpillars of the Silver Y Moth, the *Plusia gamma* which seldom does much mischief in this country, was reported from Kenmare in Ireland.

Attacks to orchards and bush fruits, are steadily increasing both in severity, and in difficulty of dealing with them, consequently on the increasingly large areas of land occupied permanently by one kind of crop.

Applications regarding apple attacks were unusually numerous, including those of Codlin Moth and Sawfly caterpillars to fruit; Weevil, and the Little "Apple Sucker" (*Psylla mali*), to the flower buds or their stems, and Thrips also, and the Apple bark scale. An attack to fruit in one district which I was informed had been considered to be that of the exceedingly injurious maggots of the U. S. A. *Trypeta pomonella* fly, caused some uneasiness, but as no larvæ or specimens of the fly had been secured, I venture to hope it may turn out to be only a somewhat uncommon form of one of our English attacks. Any way it can do no harm to mention that if imported apples are noticed to be much tunnelled inside by the legless maggots of a two winged fly, it would be of importance to attend to the matter at once.

In Plum tree infestation I am sorry to say that yet another Shot-borer beetle has appeared, namely the *Xyleborus saxeus*, which forms flat chambers in the solid wood, thereby doing great damage to the trees, this in addition to the *X. dispar* which appeared as a destructive Plum-wood pest in 1889.

Pear and Cherry Leafage is still yearly much injured by the caterpillars known as "Slugworms" of the Pear and Cherry Sawfly, which is quite unnecessary, as the remedy and prevention of recurrence is sure and simple.

The ordinary attacks to bush fruits appear to have been much as usual, excepting in a remarkable prevalence of the Gooseberry and Currant Magpie Moth, and also of the somewhat large brown "Ground beetle" the *Harpalus ruficornis*, which did much damage to ripening Strawberry fruit in various localities, and appeared in great numbers, though (in the absence of Strawberry grounds) not as a fruit pest in the neighbourhood of St Albans.

The Black Currant Gall Mite, which causes the buds to develop into mere useless roundish knobs instead of producing fruit and leaves, now causes serious and yearly increasing losses where this crop is grown on a large scale, and the yearly repeated, and carefully conducted experiments of some of our chief currant growers, have as yet failed in being more than palliatives. As however there appears to be just a possibility that some varieties might be less subject to attacks than others, I have, through the courtesy of one of my colleagues, been favoured with a supply of cuttings from Budapest, which will be carefully experimented with, and result (if satisfactory) duly mentioned.

Amongst forest attacks, the "Pine beetle" *Hylurgus piniperda*, attracted especial attention (as also in 1896) consequently on the spread of the infestation to standing timber, from the great amount of trees blown down in various localities, especially in North Britain, which furnish breeding grounds beneath the bark for beetles. On one large property, not less than a hundred thousand trees in numbers were thrown down. The requisite preventive measures are being carefully undertaken. Amongst other Pine attacks, the Weevil which injures tender bark; caterpillars of Pine Sawfly which take the leaves; and of a Tortrix moth which especially live in the bud of the terminal shoot, and the large maggots of the great four winged fly the *Sirex gigas* were especially mentioned. Some interest has also been excited by observation of this *Sirex* and also of an extraordinarily long-horned beetle, known as the "Timberman" in coal mines, where they have been brought in maggot state in imported timber.

Elm bark beetles (an important pest) have been receiving attention. Attacks of leafage caterpillars whether to that of Oaks or other trees have been bad in some instances locally, but not so severe generally as in the two preceding years, when the long drought favoured development of caterpillars and kept back that of leaves. An attack of a kind of soft "Scale insect" *Cryptococcus fagi*, which covers trunks of Beech trees with a white felt-like secretion, and is both more injurious and more prevalent than is generally known of, was brought forward.

Amongst special attacks, that of Warble fly to cattle was as usual much before the public, notwithstanding that the practical work of large numbers of our best known Cattle Owners, Farmers, and Veterinary Surgeons for years back, have shown that it can with little trouble, and hardly any cost, be thoroughly kept in check. The Deer Forest Fly furnished observations, of some interest scientifically, as to abortive development or injured presence of wings in the female.

Locusts have again been found in large numbers, in the "Alfalfa" or Lucerne Hay, imported from the Buenos Ayres district of South America, and in one instance it was reported to me that three horses of one proprietor fed on the infested hay fell ill, but recovered on discontinuance of the fodder containing locusts, and (in one case) also with treatment. The cows were not affected by the same fodder.

Amongst house insects, the "German Cockroach" is establishing itself so widely that it needs attention. It is distinguishable by being much smaller than our common kind, and of a yellowish or brownish colour, striped with darker brown.

The very beneficial insects, the "Lady-bird beetles," appeared in such great numbers, in various places, that they call for a word to note that it is not they, but the Aphides or Plant Lice, which they come to destroy, which are the cause of the damage observed. Sometimes a word is needed to save the "Lady-birds" and their sooty grubs from (so far as is possible) being cleared, although Hop-growers know their value.

Amongst crop infestations not caused by true insects, Tulip-root to oats, was more than usually prevalent, and also stem sickness in clover was observed, both caused by Stem Eelworms. The same kind of eelworm (which for the first time recorded in England) was noticed in 1896, in Onions, was then attended to and is checked.

It may be of interest to add relatively to natural helpers in checking increase of the very destructive "Shot-borer" beetles mentioned above, that towards the middle of August the stems of the Plums were observed to be enormously infested with *Acanthosoma* or Mites. On submitting these to the skilled Arachnologist, Mr. Albert Michael, he pronounced them to be the *Oribata lapidaria*, a species which feeds chiefly on lichens and minute fungi; and, as a great part of the food of the Shot-borers consists of a coating of peculiar fungoid growth which covers their cells and to some degree their passages, it may well be that the fungus-eating mites are the best helpers we could have.

Besides the above observations on infestations of insects or insect allies, much other communication and enquiry was sent regarding less important attacks, and matters connected with prevention and remedy, and it is satisfactory to find that there is a steady increase generally in serviceable attention to the subject, as well as in the help available under the direction of the Committees of Technical Institutions in various Counties.

Yours &c.,

Torrington House,
St. Albans, December 16th, 1897.

Edmond A. B. B. B. J. E. S.

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With compliments from the writer
Dec. 29th. 1897.